

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of claims in the application.

Claims 1-32 (Canceled)

Claim 33 (Currently Amended) A biochip reader for reading image data, said biochip reader comprising:

a microscopic optical system selected from the group consisting of a scanning confocal optical system, a non-scanning confocal optical system, and a 2-photon excitation optical system and provided with dichroic mirrors for irradiating excitation light on a biochip and separating fluorescent light emitted by the biochip from the excitation light;

a light source which irradiates excitation light simultaneously on a plurality of samples provided as spots or an array in a two dimensional manner on a surface of [[a]] the biochip via said dichroic mirror, and which causes said plurality of samples to emit the fluorescent light different in wavelength from said excitation light;

a single optical detector which forms optical images of all the samples arranged on the surface of the biochip within an acceptance surface thereof, and which detects said fluorescent light emitted by said plurality of samples as spectroscopic information; and

a separating means for separating said fluorescent light emitted by said samples and incident on said dichroic mirror, and for developing said fluorescent light as said spectroscopic information at different locations on said single optical detector according to wavelength, said

spectroscopic information being developed between images of adjacent samples among said plurality of samples,

wherein said spectroscopic information is detected by said single optical detector in a two dimensional manner.

Claim 34-36 (Canceled)

Claim 37 (Previously Presented) The biochip reader of claim 33, further comprising a shield having a plurality of apertures aligned with positions of each of said plurality of samples, said shield being disposed between said light source and said biochip,

wherein the area of spectroscopy is restricted by said apertures.

Claim 38 (Previously Presented) The biochip reader of claim 33, wherein said light source comprises means for directing said excitation light to be irradiated onto one side of said biochip which is opposite to a side surface wherein said plurality of samples are arranged.

Claim 39 (Currently Amended) The biochip reader of claim 33, wherein said separating means comprises a grating, a dichromatic mirror comprised of a plurality of dichromatic mirrors, each having different wavelength characteristics, or a Fourier spectrometer.

Claim 40 (Currently Amended) A combination, comprising:

a biochip on which a plurality of samples are provided as spots or an array in a two dimensional manner on a surface of said biochip, and

a biochip reader comprising:

a microscopic optical system selected from the group consisting of a scanning confocal optical system, a non-scanning confocal optical system, and a 2-photon excitation optical system and provided with dichroic mirrors for irradiating excitation light on a biochip and separating fluorescent light emitted by the biochip from the excitation light;

a light source which irradiates excitation light simultaneously on a plurality of samples provided as spots or an array in a two dimensional manner on a surface of [[a]] the biochip via said dichroic mirror, and which causes said plurality of samples to emit the fluorescent light different in wavelength from said excitation light;

a single optical detector which detects said fluorescent light emitted by said plurality of samples as spectroscopic information; and

a separating means for separating said fluorescent light emitted by said samples and incident on said dichroic mirror, and for developing said fluorescent light as said spectroscopic information at different locations on said single optical detector according to wavelength, said spectroscopic information being developed between images of adjacent samples among said plurality of samples,

wherein said spectroscopic information is detected by said single optical detector in a two dimensional manner.

Claim 41 (Cancelled)

Claim 42 (Previously Presented) The combination of claim 40,

wherein said biochip reader further comprises a shield having a plurality of apertures aligned with positions of each of said plurality of samples, said shield being disposed between said light source and said biochip, and

wherein the area of spectroscopy is restricted by said apertures.

Claim 43 (Previously Presented) The combination of claim 40, wherein said light source comprises means for directing said excitation light to be irradiated onto one side of said biochip which is opposite to a side surface wherein said plurality of samples are arranged.

Claim 44 (Currently Amended) The combination of claim 40, wherein said separating means comprises a grating, a dichromatic mirror comprised of a plurality of dichromatic mirrors, each having different wavelength characteristics, or a Fourier spectrometer.